

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE –**  
**RAIGAD -402 103**  
**Semester Examination – December - 2017**

**Branch: B. Tech. Mechanical**

**Subject with Subject Code:- Machine Drawing and CAD (BTMEC304)**

**Date: - 07/12/2018**

**Sem.:- III**

**Marks: 60**

**Time:- 4 Hr.**

**Instructions to the Students**

1. Question No.5 is compulsory. Attempt **any three** questions from the remaining.
2. If some part or data is noticed to be missing, you may appropriately assume it and should mention it clearly.

**(Marks)**

**Q.1. Attempt any two of the following.**

- a) Illustrate removed section with an example.
- b) Show flexible coupling with a neat diagram.
- c) Represent Bevel gears with convention.

**(12)**  
**(6)**  
**(6)**  
**(6)**

**Q.2. Attempt any two of the following.**

- a) Represent Double Riveted Double strap butt joint.
- b) Show convex double V butt weld with convention and symbol.
- c) Represent socket and spigot joint for pipes with a neat diagram.

**(12)**  
**(6)**  
**(6)**  
**(6)**

**Q.3. Attempt any two of the following.**

**(12)**

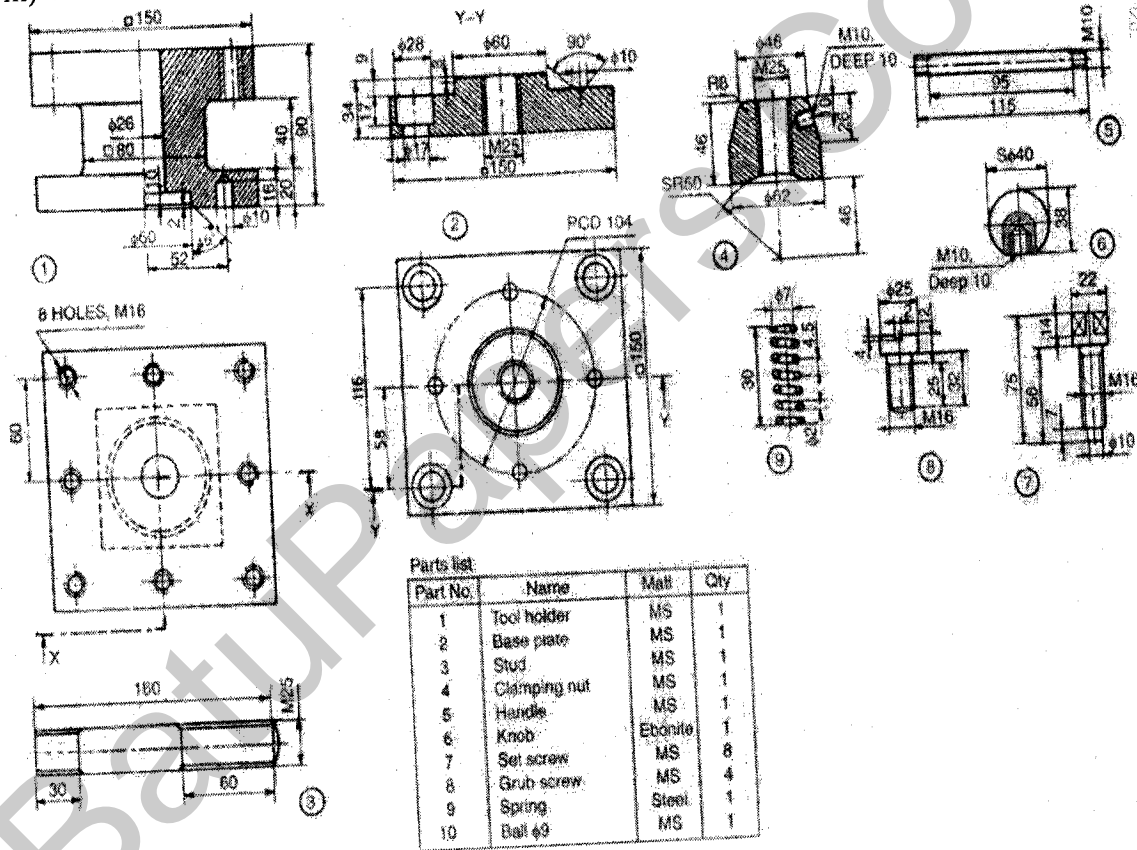
- a) A right circular cylinder with base diameter 60 mm axis length 60 mm stands vertically on its base in the H.P. A square prism with side of base 25 mm, axis length 80 mm penetrates horizontally such that its axis is parallel to V.P. and 10 mm away (in front) from the axis of vertical cylinder and is 30 mm above the base of the cylinder. The faces of square prism are equally inclined with H.P. draw the projections of solids with curve of intersection. **(6)**
- b) A vertical cone of base diameter 100 mm and axis length 90 mm is penetrated by a horizontal cylinder of base diameter 50 mm axis length 120 mm. The axis of the cylinder is parallel to V.P. and is 30 mm above the base of cone. The axis of cylinder is 12 mm away from the axis of the cone. Draw the projections of the solids showing curves of intersection. **(6)**
- c) A vertical square prism of side 50 mm and height 90 mm is resting on the ground on its base with one side of base inclined at  $30^\circ$  to the V.P and is completely penetrated by a horizontal square prism of 40 mm side and 100 mm axis length. the axis of the horizontal square prism is parallel to the V.P and bisects the axis of the vertical prism at right angle. All the rectangular faces of the horizontal prism are equally inclined to the V.P. draw the projections of the solids showing the lines of intersection. **(6)**

**Q.4.** Attempt any two of the following. (12)

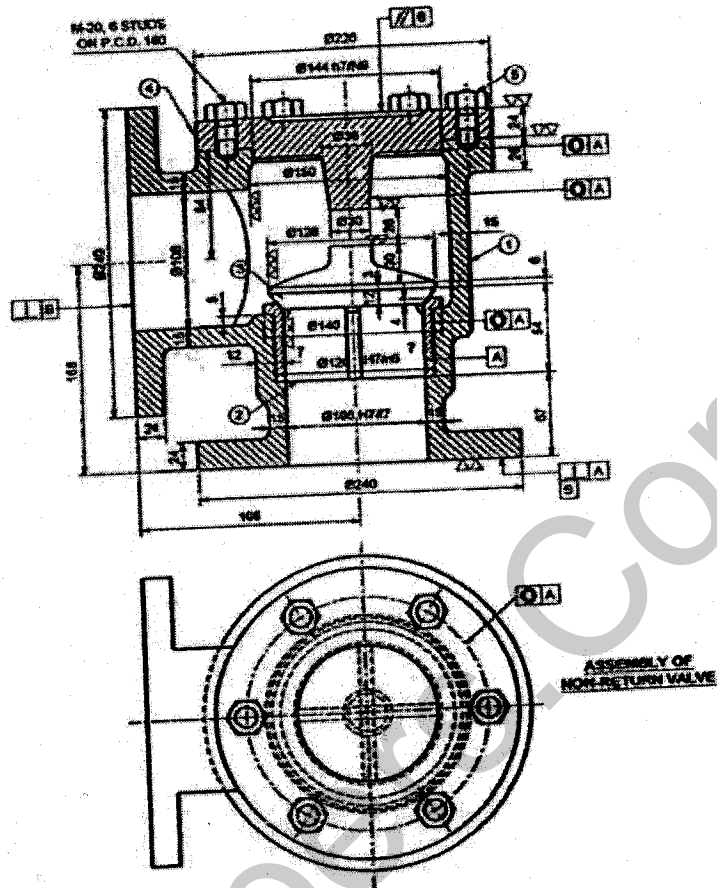
- a) Represent transition fit and interference fit. (6)
- b) Show surface roughness value and roughness grade symbol for roughness grade number N3. (6)
- c) Highlight the advantages of Computer Aided Design and Drafting (CADD). (6)

**Q.5.** Attempt any one of the following. (24)

- a) Fig. No.1 shows details of square tool post. Draw sectional front view and top view of the assembly and also prepare bill of material. (24)
- b) Fig. No. 2 shows assembly of Non-Return valve. Draw detailed drawing of the following: (10)
  - i) Body – Sectional Front view and Top view. (7)
  - ii) Cover – Front view and Top view. (7)
  - iii) Valve seat – Front view and Top view. (7)



**Fig. No. 1 – Details of Square Tool Post**



**FIT CHART**

106H7/f7	= CLEARANCE FIT
146H7/m6	= CLEARANCE FIT
120H7/a8	= TOLERANCE FIT

**PART LIST**

PART NO.	PART NAME	MATERIAL	QTY.
1	BODY	C.I.	1
2	VALVE SEAT	G.M.	1
3	VALVE	G.M.	1
4	COVER	C.I.	1
5	STUD WITH NUT	M.S.	4

**Fig. No. 2 – Assembly of Non-Return valve**

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